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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/066,109

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Daniel D. McNeil

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EXAMINER

SANTOS, PATRICK J D

ART UNIT

PAPER NUMBER

2161

DATE MAILED: 01/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/066,109

Applicant(s)

MCNEIL, DANIEL D.

Examiner

Patrick J Santos

Art Unit

2161

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1, 9-13, and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,799,147 to Shannon (hereafter Shannon '147) in view of U.S. Patent No. 5,604,862 to Midgely et al. (hereafter Midgely '862), and further in view of U.S. Patent No. 6,415,300 issued to Liu (hereafter Liu '300).

Claims 1 and 13:

Regarding Claims 1 and 13, Shannon '147 discloses: a method for backing up data in a computer system from at least one primary data source to a secondary data source, the method comprising:

- (Claim 1 and Claim 13) performing a full image backup on a plurality of data blocks stored by the at least one primary data source (Shannon '147: col. 3, lns. 6-11); and
- (Claim 1 and Claim 13) initiating an incremental backup at a predetermined interval (Shannon '147: col. 6, lns. 38-44), the incremental backup including file system metadata (Shannon '147: col. 6, lns. 38-44 - note that Shannon '147 requires the creation of a "new map" that reads on file system metadata that allows tracking of files and folders as recited in the claim).

However, Shannon '147 does not explicitly disclose:

- (Claim 1) comparing the modification time of each file/folder at the predetermined interval to a defined time, wherein if the modification time is earlier than the defined time, then excluding data blocks of that file/folder from the incremental backup;
- (Claim 13) comparing the modification time of each file/folder at the predetermined interval to a defined time, wherein if the modification time is later than the defined time, then including data blocks of that file/folder in the incremental backup.

Additionally, Shannon '417 does not explicitly disclose the following limitations added in the present Amendment: that the full image backup is in disk order.

Midgely '862 discloses:

- (Claim 1) comparing the modification time of each file/folder at the predetermined interval to a defined time, wherein if the modification time is earlier than the defined time, then excluding data blocks of that file/folder from the incremental backup (Midgely '862: col. 2, lns. 17-19; col. 2, lns. 37-39);
- (Claim 13) comparing the modification time of each file/folder at the predetermined interval to a defined time, wherein if the modification time is later than the defined time, then including data blocks of that file/folder in the incremental backup (Midgely '862: col. 2, lns. 17-19; col. 2, lns. 37-39).

However, Midgely '862 does not explicitly disclose: that the full image backup is in disk order.

Liu '300 discloses: full image backup in disk order (Liu '300: col. 1, lns. 62-64; col. 5, lns. 1-18). Additionally, Liu '300 discloses the backup including file system metadata (Liu '300: col. 1, lns. 65-68; col. 4, lns. 26-44 – note the Catalog reads on file system metadata).

It would have been obvious to a person having ordinary skill in the art to apply the modification time comparison of Midgely '862 as the backup criteria of Shannon '147. The motivation to accomplish said application is suggested by Midgely '862 which discloses the advantage of eliminating data already backed up from the backup application throughput, thus reducing server load (Midgely '862: col. 3, lns. 8-37).

It would have been further obvious to a person having ordinary skill in the art to apply the writing of data block in disk order of Liu '300 to the Shannon '147 and Midgely '862 combination and also to substitute the file metadata of Liu '300 for the file metadata of the Shannon '147 and Midgely '862 combination. The motivation to combine is suggested by Liu '300 which explicitly discloses speed increases in backup applications (such as that of the Shannon '147 and Midgely '862 combination) by reducing disk head movements by reading in disk order (Liu '300: col. 1, lns. 42-53; col. 1, lns. 60-64).

Claims 9-12 and 21-24:

Regarding Claims 9-12 and 21-24, Shannon '147, Midgely '862, and Liu '300 in combination disclose all the limitations of Claims 1 and 13 (supra). Additionally, Shannon '147, Midgely '862, and Liu '300 in combination disclose:

- (Claims 9 and 21) the file system metadata allows the tracking of new, changed, renamed, and linked files/folders (Shannon '147: col. 6, lns. 17-33; Liu '300 col. 1, lns. 65-68; col. 4, lns. 26-44);
- (Claims 10 and 22) the full backup and the incremental backup are used to provide a point-in-time disaster recovery (Shannon '147: col. 1, lns. 8-17; Midgely '862: col. 3, lns. 11-12);

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- (Claims 11 and 23) the full image backup and the incremental backup are used to keep a standby machine up-to-date as of a last backup (Shannon '147: col. 2, lns. 63-65);
- (Claims 12 and 24) the full image backup and the incremental backup are written directly over a network to a standby machine and recovered, thereby keeping the standby machine up-to-date as of a last backup (Shannon '147: col. 2, lns. 63-65; col. 3, lns. 24-33).

3. Claims 2-4 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shannon '147, Midgely '862, and Liu '300, in view of the publication, "Oracle 7 (TM) Server Administrator's Guide," distributed by Oracle Corporation (TM) as part of the document set for Oracle 7 (TM) Server, published 1992 (hereafter Oracle '92).

Claims 2-4 and 14-16:

Regarding Claims 2-4 and 14-16, Shannon '147, Midgely '862, and Liu '300 in combination disclose all the limitations of Claims 1 and 13 (supra). However, Shannon '147, Midgely '862, and Liu '300 in combination do not explicitly disclose:

- (Claims 2 and 14) the defined time is a time when the full image backup was performed;
- (Claims 3 and 15) the defined time is a time when a last incremental backup was performed;
- (Claims 4 and 16) the defined time is one of a first time when the full image backup was performed and a second time when a last incremental backup was performed, whichever is the more recent;

Oracle '92 discloses:

- (Claims 2 and 14) the defined time is a time when the full image backup was performed (Oracle '92: pp. 18-3, 18-18, 18-19 - note the Cumulative and Complete Export models).;
- (Claims 3 and 15) the defined time is a time when a last incremental backup was performed (Oracle '92: pp. 18-3, 18-18, 18-19 - note the Incremental Export model);
- (Claims 4 and 16) the defined time is one of a first time when the full image backup was performed and a second time when a last incremental backup was performed, whichever is the more recent (Oracle '92: pp. 18-3, 18-18, 18-19 - note Fig 18-3 on p. 18-19; in a export schedule utilizing a mix of incremental and cumulative backups, the next checkpoint backup will be of the most recent of either of an incremental or cumulative backup);

It would have been obvious to a person having ordinary skill in the art to apply the Oracle '92 backup schedule and strategy to the Shannon '147, Midgely '862, and Liu '300 combination. The motivation to combine is suggested by Oracle '92 which suggests a combination of Cumulative, Complete, and Incremental exports to provide the advantage of added protection and flexibility (Oracle '92: p. 18-3, Section titled, "Export Database Data for Added Protection and Flexibility").

4. Claims 5 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shannon '147, Midgely '862, and Liu '300, in view of U.S. Patent No. 5,195,025 issued to Boecker et al. (hereafter Boecker '025).

Claims 5 and 17:

Regarding Claims 5 and 17, Shannon '147, Midgely '862, and Liu '300 in combination disclose all the limitations of Claims 1 and 13 (supra). However, Shannon '147, Midgely '862, and Liu '300 in combination do not explicitly disclose:

- (Claims 5 and 17) further including determining whether a system clock has been changed;

Boecker '025 discloses a means of automatically updating system clocks to reflect seasonal changes such as Daylight Savings Time. Specifically, Boecker '025 discloses :

- (Claims 5 and 17) further including determining whether a system clock has been changed (Boecker '025: Abstract);

It would have been obvious to a person having ordinary skill in the art to apply the Boecker '025 system clock check to the Shannon '147, Midgely '862, and Liu '300 combination. The motivation to combine is suggested by Boecker '025, which discloses the advantage of automating system clock changes as opposed to manual update (Boecker '025: col. 1, lns. 31-49). Further note that Midgely '862 provides a means to trigger backup policies in response to system events such as that of the system clock changes of Boecker '025 (Midgely '862: col. 2, lns. 60-62).

5. Claims 6-8 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shannon '147, Midgely '862, Liu '300, Boecker '025, in view of Oracle '92.

Claims 6 and 18:

Regarding Claims 6 and 18, Shannon '147, Midgely '862, Liu '300, and Boecker '025 in combination disclose all the limitations of Claims 5 and 17 (*supra*). However, Shannon '147, Midgely '862, Liu '300, and Boecker '025 in combination do not explicitly disclose:

- (Claims 6 and 18) wherein if the system clock has been changed, then returning to performing the full image backup on the plurality of data blocks.

Oracle '92 discloses:

- (Claims 6 and 18) wherein if the system clock has been changed, then returning to performing the full image backup on the plurality of data blocks (Oracle '92: pp. 18-3, 18-18, 18-19 - note the Cumulative and Complete Export models).

It would have been obvious to a person having ordinary skill in the art to apply the Oracle '92 backup schedule and strategy to the Shannon '147, Midgely '862, Liu '300, and Boecker '025 combination. The motivation to combine is suggested by Oracle '92 which suggests a combination of Cumulative, Complete, and Incremental exports to provide the advantage of added protection and flexibility (Oracle '92: p. 18-3, Section titled, "Export Database Data for Added Protection and Flexibility"). Note that in the Shannon '147, Midgely '862, Liu '300, Boecker '025, and Oracle '92 combination, Midgely '862 provides for triggering backup events from system events (Midgely '862: col. 2, lns. 60-62) such as the system clock change events of Boecker '025, which are used to implement a typical backup schedule automation such as that of Oracle '92 (Oracle '92: p. 18-19, Fig. 18-3, titled, "A Typical Export Schedule").

Claims 7-8, and 19-20:

Regarding Claims 7-8 and 19-20, Shannon '147, Midgely '862, Liu '300, Boecker '025, and Oracle '92 in combination disclose all the limitations of Claims 6 and 18 (*supra*).

Additionally, Shannon '147, Midgely '862, Liu '300, Boecker '025, and Oracle '92 in combination disclose:

- (Claims 7 and 19) if the system clock has not been changed, then initiating the incremental backup at the predetermined interval (Oracle '92: pp. 18-3, 18-18, 18-19 - note the Incremental Export model);
- (Claims 8 and 20) if the system clock has not been changed, then comparing the modification time of each file/folder at the predetermined interval to the defined time (Oracle '92: pp. 18-3, 18-18, 18-19 - note the Incremental Export model) and (Midgely '862: col. 2, lns. 37-39 - note that in the incremental export of Midgely '862, in order to test for older files, the mod time has to be checked).

Response to Arguments

6. Applicant's arguments filed October 8, 2004 have been fully considered but they are not persuasive. Applicant's arguments are addressed as follows:

- A. Current claim language does not adequately distinguish between "a full image backup ... on a plurality of data blocks" and backing up of files (Amendment: p. 6, lns. 20-29, p. 8, lns. 11-18, and p. 9, lns. 25-26).

Applicant attempts to distinguish between a "full image backup ... of a plurality of data blocks" and a "file by file" backup. However, Examiner points out that if only certain files are specified for backup, then a file by file backup reads on a "full image backup ... on a plurality of data blocks". In other words, the original claim language did not adequately address this distinction.

In the rejections regarding Claims 1 and 13 in the prior Office Action, Examiner pointed out a divergence between Applicant's specification and the claim language as follows:

Examiner notes Specification states that a key advantage of Applicant is the increased accuracy and speed by virtue of writing data blocks in disk order rather than file order (Specification: p. 7, para [0023]). However, Applicant's Claims do not recite this approach as a limitation. Examiner thus notes that by since files are composed of blocks, by virtue of backing up files, Shannon '147 and Midgely '862 in combination disclose backing up blocks.

Examiner notes the currently amended claims still retain this issue. Furthermore, the addition of Liu '300 to the rejections of Claims 1 and 13 (and corresponding dependent claims), addresses the newly added limitation of writing data block in disk order.

- B. Applicant's allegation that Shannon '147's teaches away from a combination with Midgely '862 is based on a misreading of Shannon '147 (Amendment: p. 8, lns. 3-10).

Applicant argues that Shannon '147 teaches away from using file dates provided by MS-DOS (TM) and because Shannon '147 disparages the reliability of MS-DOS (TM) file dates (Shannon '147: col. 1 lns. 63-65). Examiner points out that a full reading of the section cited by Applicant (Shannon '147: col. 1 lns. 63-67) reads:

In addition, the date on a vast majority of MS-DOS (TM) machines is an unreliable indicator because the data is poorly maintained. In fact, on

many machines, the date and time stamp will rely on the computer being turned on and off because the clock battery is dead.

What Shannon '147 is pointing out is not a deficiency of MS-DOS (TM) itself, but the maintenance of the machines itself. In other words, if you don't set the system clock, or if you let your clock battery go dead, then you won't have an accurate file date. On the other hand, if the system administrator were to properly set the clock time on the machines (a facility well known in MS-DOS (TM)) and to ensure the clock batteries were not dead, then there would be a reasonable certainty that the file dates could be relied on. Therefore, a combination with the checking of filedates of Midgely '862 would also have a reasonable certainty of success. Examiner points out that in a production environment, where a system administrator is concerned enough with a machine to back up the machine's data, it is likely the system administrator will also be concerned enough with a machine to care for other details of a machine's maintenance including setting the system clock and checking the clock batteries – especially if the system administrator knew that filedates were being used as part of the backup process.

C. Midgely '862 discloses excluding data blocks (Amendment: p. 8, lns. 16-18).

Applicant alleges that Midgely '862 does not disclose excluding data blocks. However, Midgely '862 states, "... only the latest version of the dequeued file is written to the active volume, and other versions in the queue are purged." (Midgely '862: col. 2, lns. 17-19). By virtue of purging older versions of files,

rather than writing them, Midgely '862 discloses an exclusion of the data blocks that were purged.

- D. A piecemeal attack against the Shannon, Midgely, Boecker, and Oracle references does not overcome a 103(a) rejection (Amendment: p. 8, lns. 8-10; p. 8, lns. 14-18; p. 8, lns. 19-27; p. 8, ln. 28 to p. 9, ln. 3).

Final arguments by Applicant that Boecker '025 and Oracle '92 does not address alleged deficiencies of Shannon '147 and Midgely '862 does not overcome a 103(a) rejection. In general, Applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Arguments regarding the new limitation of "full image backup disk order" (Amendment: p. 8, lns. 14-15; p. 8, ln. 32) are addressed in Examiner's response to argument A (*supra*).

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J Santos whose telephone number is 571-272-4028. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 571-272-4023. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Patrick J.D. Santos
January 8, 2005



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